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REMARKS/ARGUMENTS

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This Amendment is in response to the Office Action mailed February 19, 2008. Claims 1-12 were pending in the present application. This Amendment amends claims 1, 4, 7, and 12, leaving pending in the application claims 1-12. Reconsideration of the rejected claims in view of the foregoing amendments and following remarks is respectfully requested.

35 U.S.C. §102(e) Rejection of Claims 2, 3, 5, 6, and 12.

Claims 2, 3, 5, 6, and 12 are rejected under 35 U.S.C. §102(e) as being anticipated by Buyukkoc et al. (U.S. Patent No. 6,463,062, hereinafter "Buyukkoc"). Applicants respectfully traverse the rejection.

Embodiments of the present invention are directed to techniques for supporting Quality of Service (QoS) for data transmitted from a sender unit to a receiver unit across a core network. (Specification: pg. 2, lines 17-28). As shown in Fig. 1 of the Specification, an core network 16 includes a plurality of relay elements 20, 24 coupled via a plurality of network links a-g. In addition, core network 16 is coupled to a plurality of gateway elements 14. Each gateway element 14 is, in turn, coupled with an access network 12 and a trunk management system 32.

Each of the network links a-g is assigned a predetermined quantity of a communications resource (*e.g.*, bandwidth). This quantity indicates the maximum amount of network traffic supported by the link at a given period of time. Further, trunk management system 32 is configured to assign, to each gateway element 14, a portion of said predetermined communications resource for one or more network links. For example, assume that data link a is assigned a maximum bandwidth of 100 Megabytes per second (MBps). In this case, trunk management system may assign gateway element GA 50 MBps, gateway element GB 20 MBps, gateway element GC 20 MBps, and gateway element GD 10 MBps. The portion of the maximum bandwidth assigned to a gateway element indicates the bandwidth reserved on the network link for data originating from that gateway element. In this manner, the bandwidth of

any given network link a-g is divided into a plurality of bandwidths (each being reserved for a particular gateway element). (Specification: pg. 4, line 30 – pg. 5, line 2).

      In an embodiment, each gateway element 14 maintains information identifying routes (via network links a-g) to the other gateway elements. Each gateway element 14 also maintains information identifying, for each network link along a route, (1) the amount of communication resources (*e.g.*, bandwidth) for the network link assigned to the gateway element by trunk management system 32, and (2) the amount of the assigned communication resources that is available. (Specification: Figs. 8A and 8B). If a first gateway element receives a request to transfer data across core network 16 to a second gateway element with a certain minimum QoS, the first gateway element can consult the information stored within itself to determine the links along the route, and whether there is sufficient available bandwidth for each link. If so, the request is granted. (Specification: pg. 10, lines 3-10). In this manner, each gateway element can determine independently (*i.e.*, without retrieving status information from another gateway element or a central system) whether a QoS request can be satisfied.

      In accordance with the above, Applicants' independent claim 2 recites:

        A method of management of data communication through a core network between a sender unit and a receiver unit that includes the steps of:

        defining at least one communicative route through the core network between the sender unit and the receiver unit that includes a plurality of network links that each have a predetermined communication resource;

        coupling the sender unit and the receiver unit to the core network with sending and receiving gateway elements, respectively;

        allocating to the sending gateway element a first portion of the predetermined communication resources of at least certain of the network links forming a communicative route between the sending and receiving gateway elements, and maintaining at the sending gateway element information indicative of the allocated predetermined communication resources and status information indicative of a currently used amount of the allocated communication resources and a currently available amount of the allocated communication resources;

        receiving at the sending gateway element a request from the sender unit for a data transfer across the communicative route, the request including a specification of requested communication resource, the sending gateway element checking the status information to grant the

> request if the currently available amount of the allocated communication resources of the
>
> communicative route is equal or greater than the requested communication resource.
>
> (Applicants' independent claim 2, emphasis added).

At least the above features of claim 2 are not disclosed by Buyukkoc.

Buyukkoc is directed to a method for transferring data in an ATM network. As shown in Fig. 1 of Buyukkoc, an ATM network 20 includes a plurality of ATM switches 110-180 and a plurality of edge nodes 210-320. The ATM switches and edge nodes are connected via links 111-119, 121-124, 211-219, 221-229, and 231-233. ATM network 20 also includes a central fabric network interface (CFNI) 40. As described in Buyukkoc, CFNI 40 maintains information identifying a bandwidth capacity for each link in the network. (Buyukkoc: col. 9, lines 27-35). As best understood, the bandwidth capacity for each link is <u>shared</u> among all of the edge nodes.

Each edge node 210-320 includes a routing table containing routes (via the links) to other edge nodes. Each edge node also keeps track of the amount of data being transmitted from itself along the links of a particular route. (Buyukkoc: col. 7, line 51 – col. 8, line 67). However, edge nodes 210-320 do not track the <u>total</u> amount of bandwidth being used on a particular link: "the important fact to note is that an edge node does not, by itself, know the traffic level on the various alpha links of the other edge nodes and on the beta links of network 10." (Buyukkoc: col. 9, lines 22-25). Rather, this information is tracked by <u>CFNI 40</u>. Thus, when an edge node needs to send data along a particular route, the edge node must <u>send a request to CFNI 40</u>. CFNI 40 collects, from all of the edge nodes, the total amount of used traffic on the links, and <u>determines whether one or more links can support additional traffic</u> from the requesting edge node. CFNI 40 then sends this status information back to the edge node, which transmits or does not transmit the data accordingly. (Buyukkoc: col. 9, lines 26-37).

Applicants submit that the invention of Buyukkoc is substantially different from Applicants' independent claim 2. For example, Buyukkoc does not disclose "allocating to the sending gateway element a first portion of the predetermined communication resources of at least certain of the network links forming a communicative route between the sending and receiving gateway elements" as recited in claim 2. As discussed above, the bandwidth capacity

for each of the links in Buyukkoc is apparently shared among all of the edge nodes 210-320. In

contrast claim 2 specifically recites that a portion of the predetermined communication resources

for a link (e.g., bandwidth capacity) is allocated to a particular gateway element, such that no

other gateway element can used that allocated portion.

        Further, Applicants submit that Buyukkoc does not disclose "maintaining at the

sending gateway element information indicative of the allocated predetermined communication

resources and status information indicative of a currently used amount of the allocated

communication resources and a currently available amount of the allocated communication

resources" as recited in claim 2. Buyukkoc does describe maintaining, at an edge node, an

amount of bandwidth used by that edge node for a particular link. (Buyukkoc: Table IV).

However, merely storing the amount of bandwidth used by a single edge node for a link does not

correspond to either (1) "information indicative of the allocated predetermined communication

resources" or (2) "a currently available amount of the allocated communication resources" as

recited in claim 2.

        With respect to (1), Buyukkoc fails to disclose anything about allocating portions

of link bandwidth to specific edge nodes as discussed above. With respect to (2), the claimed

"currently available amount of the allocated communication resources" represents the total

amount of bandwidth that is available to a gateway element for additional data transfers.

Specifically, it is the amount of bandwidth allocated to the gateway element minus the amount of

bandwidth used by the gateway element. In contrast, the information stored in the edge nodes of

Buyukkoc is simply the amount of bandwidth used by the edge node. Using only this

information, an edge node cannot determine how much bandwidth is still available on a link.

Accordingly, Buyukkoc fails to disclose "maintaining at the sending gateway element

information indicative of the allocated predetermined communication resources and status

information indicative of a currently used amount of the allocated communication resources and

a currently available amount of the allocated communication resources" as recited in claim 2.

        Yet further, Applicants submit that Buyukkoc does not disclose "the sending

gateway element checking the status information [maintained within the gateway element] to

grant the request if the currently available amount of the allocated communication resources of

the communicative route is equal or greater than the requested communication resource" as

recited in claim 2. As discussed above, when an edge node of Buyukkoc needs to transfer data,

the edge node must receive status information from CFNI 40 in order to determine whether there

is sufficient available bandwidth capacity along the route to support the transfer. In contrast,

claim 2 specifically recites that the sending gateway element can decide, by itself, whether there

is sufficient available link bandwidth for a particular data transfer by accessing the status

information stored within the gateway element. Since, the edge nodes of Buyukkoc must receive

status information from another system/entity in order to determine whether there is sufficient

available bandwidth capacity for a data transfer, rather than access status information stored

within itself, Buyukkoc necessarily fails to teach or suggest "the sending gateway element

checking the status information [maintained within the gateway element] to grant the request if

the currently available amount of the allocated communication resources of the communicative

route is equal or greater than the requested communication resource" as recited in claim 2.

        For at least the foregoing reasons, Applicants submit that independent claim 2 is

not anticipated or rendered obvious by Buyukkoc, and respectfully request that the rejection of

claim 2 be withdrawn.

        Independent claim 12 recites features that are substantially similar to independent

claim 2, and is thus believed to be allowable for at least a similar rationale as discussed for claim

2, and others.

        Dependent claims 3, 5, and 6 depend from independent claim 2, and are thus

believed to be allowable for at least a similar rationale as discussed for claim 2, and others.

35 U.S.C. §103(a) Rejection of Claims 1 and 7

        Claims 1 and 7 are rejected under 35 U.S.C. §103(a) as being unpatentable over

Buyukkoc. Applicants respectfully submit that Buyukkoc does not teach or suggest the features

of these claims.

        Claims 1 and 7 recite features that are substantially similar to independent claims

2 and 12, which are not rendered obvious by Buyukkoc as discussed above. Thus, claims 1 and

7 are believed to be allowable for at least a similar rationale as discussed for claims 1 and 12, and others.

35 U.S.C. §103(a) Rejection of Claims 4 and 8-11.

Claims 4 and 8-11 are rejected under 35 U.S.C. §103(a) as being unpatentable over Buyukkoc as applied to claims 3 and 7 above, and further in view of Kenney et al. (U. S. Publication No. 2002/0122422, hereinafter "Kenney"). Applicants respectfully submit that Buyukkoc and Kenney, considered individually or in combination, do not teach or suggest the features of these claims.

Claims 4 and 8-11 depend (either directly or indirectly) from independent claims 2 and 7 respectively, which are not rendered obvious by Buyukkoc as discussed above. The deficiencies of Buyukkoc in this regard are not remedied by Kenney. Accordingly, even if Buyukkoc and Kenney were combined (although there appears to be no rationale for combining), the resultant combination would not teach or suggest all of the features of claims 4 and 8-11. Applicants therefore respectfully submit that claims 4 and 8-11 are allowable over the cited art.

Amendments to the Claims

Unless otherwise specified, amendments to the claims are made for purposes of clarity, and are not intended to alter the scope of the claims or limit any equivalents thereof. The amendments are supported by the Specification as filed and do not add new matter.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested.

          If the Examiner believes a telephone conference would expedite prosecution of

this application, please telephone the undersigned at 650-326-2400.

                              Respectfully submitted,

                              /Andrew J. Lee/

                              Andrew J. Lee
                              Reg. No. 60,371

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 650-326-2400
Fax: 415-576-0300
AJL:tmm:mg
61316112 v1